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WESTERN WHITE PINE STANDS SHOW IRREGULAR GROWTH PATTERN

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Haig's second-growth yield tables[1/] have been used in the western white pine type as the basis for growth predictions since their publication in 1932. These tables show a regular accretion of basal areas and cubic and board-foot volumes. However, regularity of growth seldom occurs in a given stand of western white pine. Instead, net growth often changes radically from one short growth period to the next owing to the varying action of agents causing mortality.

Twenty-five-year records of seven sample plots established in 1925 in the Oro Grande Creek drainage, Clearwater National Forest, illustrate these irregular growth rates. The plots have a site index of 65, total 3.23 acres, and were 103 years old at the time of establishment. The following table shows the average basal area and volume growth on these plots by five-year periods.

Stand values per-acre basis	5-year period growth					Total growth 25-yr. period
	1926-30	1931-35	1936-40	1941-45	1946-50	
Basal area, sq.ft.	19.0	-20.8	6.0	6.2	-10.0	00.4
Cubic volume, cu.ft.	1217	- 861	456	1021	- 425	1408
Scribner volume, bd.ft.	7550	-3620	3626	6818	-2130	12244

Growth during the period 1926-30 was slightly above that given by the yield tables. During the next five-year period, an attack of the mountain pine beetle, Dendroctonus monticolae Hopk., resulted in a net loss of basal area and volume. Growth during the next two periods, 1936-40 and 1941-45, kept pace approximately with yield table predictions. During the final half-decade period, wind and snow damage caused heavy mortality and a net loss of volume again occurred.

Despite the two periods in which mortality exceeded growth, the stands grew an average of 490 board feet per acre per year during the 25-year period, growing from 71,956 board feet per acre to 84,200. Haig's yield tables would have forecast a growth of 667 board feet per acre per year during the 25-year period.

1/ Haig, I. T. Second growth yield, stand, and volume tables for the western white pine type. U.S.D.A. Tech. Bul. 323. 1932.

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